diets. The horse can consume a concentrate mix with as much as 15% added fat without palatability or digestive problems such as diarrhea; however, research reveals that a fat level of 6 to 8% in concentrate mixes will produce performance results similar to fat levels of 10 to 20% and will cost considerably less. Most commercial feed companies add vegetable oils to the concentrate mix to produce a 5 to 8% fat content.

Switching horses from a carbohydrate concentrate to a high-fat concentrate mix (greater than 8% fat) should be done gradually over several days. The higher fat intake may initially produce a looser stool. Allow at least 21 days for the high-fat diet to affect your horse's performance and improve feed efficiency.

Traditionally, horse owners have supplemented 1 to 2 ounces of corn oil daily to improve hair-coat sheen. A significantly higher level of supplemental fat or oil is required to affect the energy intake and enhance your horse's performance. Replacement of 10% of the recommended grain intake with a high fat source will improve energy intake (Box 1).

Vegetable oil sources are about three times as expensive as farm grains. Generally, it is more economical to purchase a high-fat commercial grain mix when supplementation of more than 0.5 pounds of fat are required per day.

Fat is an important energy source for the high-performance horse. High-fat diets provide a safe, efficient energy source that will improve your horse's performance, minimize the risk of colic and founder, and usually be more cost-effective.

For Additional Information

The following titles in this series are available from your county North Carolina Cooperative Extension Center:

- AG-558-1, Nutrient Requirements for Horses
- AG-558-2, Estimating Body Weight in Horses
- AG-558-3, Selection of Feedstufs for Horses
- AG-558-4, Water Intake, Sweat Production, and Electrolyte Supplementation in the Horse
- AG-558-5, Interpreting Horse Feed Analysis
- AG-558-6, Cold Weather Feeding Practices for Horses

Additional titles are also available in the *Mare and Foal Nutrition Series*. Contact your county agent for additional information.

Box 1. Fat Supplementation to Horses at Different Performance Levels

Example 1: 1,100-lb show horse at *light* work (1 hour of work five times per week). This includes working hunter, western pleasure, and pleasure driving.

• Daily diet *without* added fat:
15 lb hay
5 lb balanced grain mix
20 lb total feed (digestible energy = 21.9 Mcal)

• 10% fat substitution calculation:
5 lb grain x 0.1 = .5 lb supplemental fat

• New fat-supplemental diet:[a]
15 lb hay
4.5 lb grain mix
0.5 lb (1 cup) corn oil
20 lb total feed (digestible energy = 23.3 Mcal)

Example 2. 1,100-lb show horse at *moderate* work. This includes horses undergoing intense daily training, three-day event horses, and competitive driving horses.

• Daily diet *without* added fat:
15 lb good quality hay
10 lb balanced grain mix
25 lb total feed (digestible energy = 28.8 Mcal)

• 10% fat substitution calculation:
10 lb grain x 0.1 = 1 lb supplemental fat

• New fat-supplemental diet:[a]
15 lb hay
9 lb grain
1 lb (2 cups) corn oil
25 lb total feed (digestible energy = 31.5 Mcal)

[a] Grain intake may be reduced an additional 10% after 21 days of fat supplementation. Adjust grain intake downward to maintain the desired body condition.

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